Small Business Innovation Research/Small Business Tech Transfer

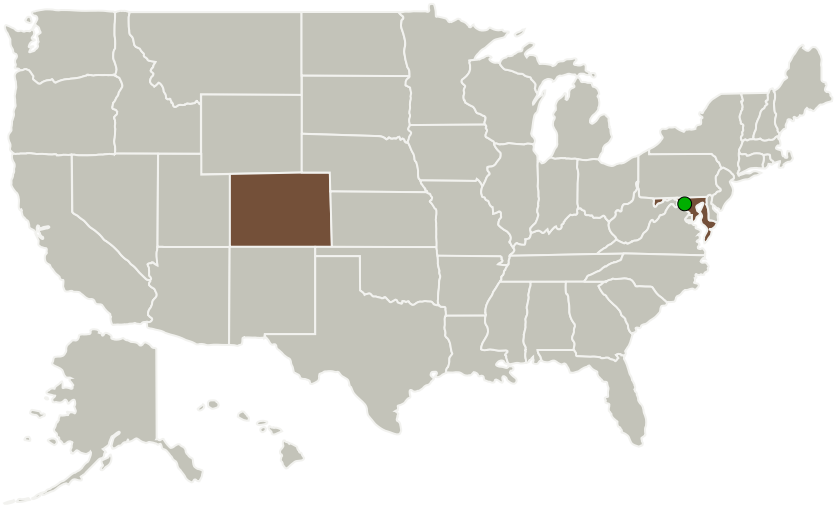
Micro-Fabricated Atomic Magnetometer With Hybrid Vector-Scalar Operation, Phase I

Completed Technology Project (2014 - 2014)

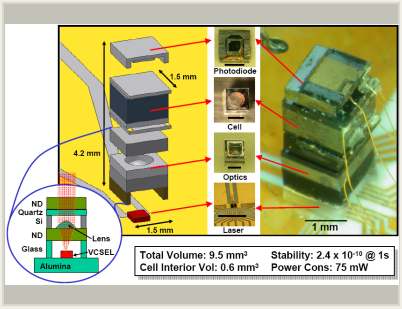
Project Introduction

Measurement of magnetic fields provides valuable information about charged particles and plasma interactions in the solar system, and about planetary dynamics and compositions. Magnetometers are thus important instruments to have aboard spacecraft on exploration missions. We propose a magnetometer system that is compact, low-cost, light-weight and low-power. The system is based on a miniature rubidium magnetometer and gives scalar and full vector operation with accuracy and sensitivity beyond state-of-the-art.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
QuSpin, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Westminster, Colorado
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



Micro-fabricated atomic magnetometer with hybrid vector-scalar operation Project Image

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Primary U.S. Work Locations	
Colorado	Maryland

Project Transitions

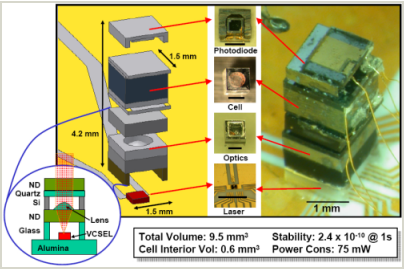
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137704)*

Images



Project Image
Micro-fabricated atomic magnetometer with hybrid vector-scalar operation Project Image *(https://techport.nasa.gov/image/128033)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
QuSpin, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

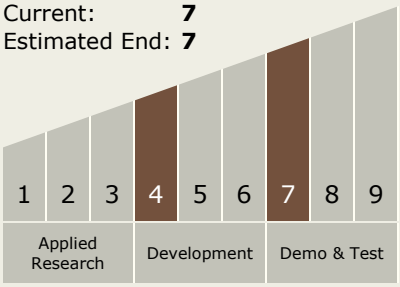
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Vishal Shah

Technology Maturity (TRL)

Start: **4**
Current: **7**
Estimated End: **7**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.1 Field and Particle Detectors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System